

What is claimed is:

1. A method for controlling the operation of an article forming system, the article forming system having a forming device for forming a sheet of material into an article having a predetermined shape and an inner space, the method comprising the steps of:

determining the presence or absence of an identifier on or in the sheet of material via a monitoring system, wherein the identifier encodes or comprises sheet information regarding the identity and/or characteristics of the sheet of material;

reading the identifier of the sheet of material via the monitoring system to obtain or interpret the sheet information from the identifier when the identifier is present on or in the sheet of material; and

modifying the operation of the article forming system when the sheet information obtained or interpreted from the identifier indicates that the sheet of material falls outside of a predetermined category, or when the sheet of material is absent an identifier.

2. The method of claim 1, wherein in the step of determining the presence or absence of an identifier, the identifier comprises at least one of a bar code, watermark, hallmark, logo, text, word, name, symbol, device, graphic, picture,

seal, hologram, color code, magnetic code, chemical tag, nanobarcode, DNA tracer, stacked symbology, matrix symbology, or combinations thereof.

3. The method of claim 2, wherein the identifier further comprises at least one of an inscribed stamp, photo-luminescent dye, IR up-converter crystals, nanoparticles, laser light, magnetic ink, metallic ink, printing ink, color ink, DNA, chemical infusion, or combinations thereof.

4. The method of claim 1, wherein in the step of determining the presence or absence of an identifier, the identifier comprises a bar code and the monitoring system comprises at least one bar code scanner.

5. The method of claim 1, wherein in the step of determining the presence or absence of an identifier, the sheet information is indicative of at least one of the source, shape, dimension, coloring, pattern, material, bonding material, structural feature, potential use, or combinations thereof, of the sheet of material.

6. The method of claim 5, wherein the sheet information comprises encrypted data, and wherein the monitoring system is able to decode the encrypted data using predetermined decodation rules.

7. The method of claim 1, wherein in the step of modifying the operation of the article forming system, the monitoring system outputs a result based on the determination of the presence or absence of the identifier on or in the sheet of material, the sheet information read from the identifier, the category, the relation of the sheet of material to the category, or combinations thereof.
8. The method of claim 7, wherein the result outputted by the monitoring system comprises an accept signal indicating that the sheet of material falls within the category, or a reject signal indicating the absence of the identifier or that the sheet of material falls outside of the category.
9. The method of claim 7, wherein the result is outputted by the monitoring system via an output signal path to at least one computer.
10. The method of claim 9, wherein the output signal path is a communication link selected from the group consisting of internet connections, intranet connections, cables, buses, cable network modems, telephone links, network connections, airway links, satellite links, radio links, local area networks, wide area networks, point-to-point shared and dedicated communications, infra-red links, microwave links, CATV links, fibre-optic links, and combinations thereof.

11. The method of claim 1 wherein the step of interpreting the sheet information is performed by a computer remote from the article forming system.
12. The method of claim 8, wherein when the monitoring system outputs the reject signal, the step of modifying the operation of the article forming system comprises disabling the operation of the article forming system.
13. The method of claim 12, wherein the monitoring system further outputs a disablement signal when the article forming system is disabled.
14. The method of claim 13, wherein the disablement signal is outputted by the monitoring system via the output signal path to at least one computer.
15. The method of claim 12, comprising the additional step of re-enabling the article forming system after the article forming system has been disabled.
16. The method of claim 15, wherein the step of re-enabling the article forming system comprises providing a predetermined enable instruction to the monitoring system .

17. The method of claim 16, wherein the predetermined enable instruction is provided to the monitoring system via an input signal path from at least one device selected from the group consisting of telephones, computers, faxes, remote controls, keyboards, keypads, mice, joysticks, and combinations thereof.

18. The method of claim 17, wherein the input signal path is a communication link selected from the group consisting of internet connections, intranet connections, cables, buses, cable network modems, telephone links, network connections, airway links, satellite links, radio links, local area networks, wide area networks, point-to-point shared and dedicated communications, infra-red links, microwave links, CATV links, fibre-optic links, and combinations thereof.

19. The method of claim 1, wherein the step of modifying the operation of the article forming system comprises altering the operating conditions of the article forming system.

20. The method of claim 1 comprising the additional step of counting at least a portion of the sheets of material and outputting a signal indicative of the count.

21. The method of claim 1, wherein in the step of determining the presence or absence of an identifier, the monitoring system further comprises a display mechanism for displaying an image of at least a portion of the sheet of material.
22. The method of claim 21, wherein the display mechanism comprises a photographic device and a display device, wherein the photographic device generates the image and communicates the image to the display device for visually displaying the image.
23. The method of claim 22 wherein the image comprises an image of the identifier.
24. The method of claim 22, wherein the photographic device is selected from the group consisting of video cameras, photographic cameras, digital cameras, image scanners, charge couple devices, and combinations thereof.
25. The method of claim 22, wherein the display device is selected from the group consisting of televisions, monitors, LCDs, flat screens, printers, copiers, photographic film, and combinations thereof.

26. The method of claim 22, wherein the photographic device is a digital or video camera and the display device is a television or monitor.
27. The method of claim 22, wherein the monitoring system further comprises a recording mechanism for recording at least a portion of the image generated by the photographic device.
28. The method of claim 27, wherein the recording mechanism comprises a recording device which records the image on a storage medium.
29. The method of claim 28, wherein the recording device is selected from the group consisting of video cassette recorders, digital video disk burners, magnetic disk drives, photographic cameras, digital cameras, optical disk drives, hard disk drives, printers, copiers, and combinations thereof.
30. The method of claim 28, wherein the storage medium is selected from the group consisting of video cassettes, digital video disks, magnetic disks, photographic film, flash memory cards, compact disks, hard disks, paper, and combinations thereof.

31. A controlled article forming system for forming an article, comprising:
an article forming system comprising a forming device for forming a sheet of material into an article having a predetermined shape and an inner space;
a monitoring system comprising a reading mechanism for determining the presence or absence of an identifier on or in the sheet of material and for reading the identifier, wherein the identifier encodes or comprises sheet information regarding the identity and/or characteristics of the sheet of material and wherein the reading mechanism of the monitoring system further interprets the sheet information of the identifier; and
wherein the monitoring system is able to modify the operation of the article forming system when the sheet information obtained from the identifier indicates that the sheet of material falls outside of a predetermined category, or when the sheet of material is absent an identifier.
32. The controlled article forming system of claim 31, wherein the identifier comprises at least one of a bar code, watermark, hallmark, logo, text, word, name, symbol, device, graphic, picture, seal, hologram, color code, magnetic

code, chemical tag, nanobarcode, DNA tracer, stacked symbology, matrix symbology, or combinations thereof.

33. The controlled article forming system of claim 32, wherein the identifier further comprises at least one of an inscribed stamp, photo-luminescent dye, IR up-converter crystals, nanoparticles, laser light, magnetic ink, metallic ink, printing ink, color ink, DNA, chemical infusion, or combinations thereof.

34. The controlled article forming system of claim 32, wherein the identifier comprises a bar code and the monitoring system comprises at least one bar code scanner.

35. The controlled article forming system of claim 31, wherein the sheet information of the identifier is indicative of at least one of the source, shape, dimension, coloring, pattern, material, bonding material, structural feature, potential use, or combinations thereof, of the sheet of material.

36. The controlled article forming system of claim 35, wherein the sheet information of the identifier comprises encrypted data, and wherein the monitoring system is able to decode the encrypted data using predetermined decodation rules.

37. The controlled article forming system of claim 31, wherein the monitoring system is able to output a result based on the determination of the presence or absence of the identifier on or in the sheet of material, the sheet information read from the identifier, the category, the relation of the sheet of material to the category, or combinations thereof.

38. The controlled article forming system of claim 37, wherein the result outputted by the monitoring system comprises an accept signal indicating that the sheet of material falls within the category or a reject signal indicating the absence of the identifier or that the sheet of material falls outside of the category.

39. The controlled article forming system of claim 37, wherein the result is able to be outputted by the monitoring system via an output signal path to at least one computer.

40. The controlled article forming system of claim 39, wherein the output signal path is a communication link selected from the group consisting of internet connections, intranet connections, cables, buses, cable network modems, telephone links, network connections, airway links, satellite links, radio links, local area networks, wide area networks, point-to-point shared and

dedicated communications, infra-red links, microwave links, CATV links, fibre-optic links, and combinations thereof.

41. The controlled article forming system of claim 31, wherein the monitoring system is able to modify the operation of the article forming system by altering the operating conditions of the article forming system.

42. The controlled article forming system of claim 38, wherein the monitoring system is able to modify the article forming system by disabling the operation of the article forming system when the monitoring system outputs the reject signal.

43. The controlled article forming system of claim 42, wherein the monitoring system is able to output a disablement signal when the article forming system is disabled.

44. The controlled article forming system of claim 43, wherein the disablement signal is able to be outputted by the monitoring system via the output signal path to at least one computer.

45. The controlled article forming system of claim 43, wherein the output signal path is a communication link selected from the group consisting of internet connections, intranet connections, cables, buses, cable network modems, telephone links, network connections, airway links, satellite links, radio links, local area networks, wide area networks, point-to-point shared and dedicated communications, infra-red links, microwave links, CATV links, fibre-optic links, and combinations thereof.

46. The controlled article forming system of claim 42, wherein the monitoring system further is able to modify the operation of the article forming system by re-enabling the article forming system after the article forming system has been disabled due to output of the reject signal.

47. The controlled article forming system of claim 46, wherein the article forming system can be re-enabled by providing a predetermined enable instruction to the monitoring system .

48. The controlled article forming system of claim 47, wherein the predetermined enable instruction can be provided to the monitoring system via an input signal path from at least one device capable of providing the predetermined enable instruction selected from the group consisting of

telephones, computers, faxes, remote controls, keyboards, keypads, mice, joysticks, and combinations thereof.

49. The controlled article forming system of claim 31, wherein the monitoring system is able to count at least a portion of the sheets of material and is able to output a signal indicative of the count.

50. The controlled article forming system of claim 31, wherein the monitoring system further comprises a display mechanism for displaying an image of at least a portion of the sheet of material.

51. The controlled article forming system of claim 50, wherein the displaying mechanism comprises a photographic device and a display device wherein the photographic device generates the image and communicates the image to the display device for visually displaying the image.

52. The controlled article forming system of claim 51, wherein the photographic device is selected from the group consisting of video cameras, photographic cameras, digital cameras, image scanners, charge couple devices, and combinations thereof.

53. The controlled article forming system of claim 51, wherein the display device is selected from the group consisting of televisions, monitors, LCDs, flat screens, printers, copiers, photographic film and combinations thereof.

54. The controlled article forming system of claim 51, wherein the photographic device is a digital or video camera and the display device is a television or monitor.

55. The controlled article forming system of claim 51, wherein the monitoring system further comprises a recording mechanism for recording at least a portion of the image, and the photographic device further communicates the image to the recording mechanism wherein the recording mechanism records the image.

56. The controlled article forming system of claim 55, wherein the recording mechanism comprises a recording device and a storage medium for recording the image on the storage medium.

57. The controlled article forming system of claim 56, wherein the recording device is selected from the group consisting of video cassette recorders, digital video disk burners, magnetic disk drives, photographic cameras, digital

cameras, optical disk drives, hard disk drives, printers, copiers, and combinations thereof.

58. The controlled article forming system of claim 56, wherein the storage medium is selected from the group consisting of video cassettes, digital video disks, magnetic disks, photographic film, flash memory cards, compact disks, hard disks, paper, and combinations thereof.

59. The controlled article forming system of claim 31, wherein the reading mechanism of the monitoring system is positioned adjacent to the forming device of the article forming system.

60. The controlled article forming system of claim 31, wherein the reading mechanism of the monitoring system is positioned remote from the forming device of the article forming system.

61. The controlled article forming system of claim 31, wherein the reading mechanism of the monitoring system is positioned on the forming device of the article forming system.

62. The controlled article forming system of claim 31, wherein the reading mechanism of the monitoring system is positioned within the forming device of the article forming system.

63. The controlled article forming system of claim 31, wherein the monitoring system is able to output an error signal if the monitoring system is not able to sense the presence or absence of the identifier of the sheet of material, read the identifier of the sheet of material when the identifier is present, determine whether the sheet information interpreted by the reading mechanism indicates that the sheet of material falls within or outside of the predetermined category, or cause the modification of the operation of the article forming system when the sheet information indicates that the sheet of material falls outside of the predetermined category or when the sheet of material is absent an identifier.

64. A monitoring system for controlling the operation of an article forming system, the article forming system comprising a forming device for forming a sheet of material into an article having a predetermined shape and an inner space, the monitoring system comprising:

a reading mechanism for determining the presence or absence of an identifier on or in the sheet of material, the identifier encoding or comprising sheet information, and for reading the identifier of the sheet of material to obtain or interpret the sheet information, wherein the sheet information includes information regarding the identity and/or characteristics of the sheet of material; and

a determination mechanism for receiving the sheet information obtained or interpreted by the reading mechanism and for determining whether the sheet information indicates that the sheet of material falls within or outside of a predetermined category, and for causing the modification of the operation of the article forming system when the sheet information indicates that the sheet of material falls outside of the predetermined category, or when the sheet of material is absent an identifier.

65. A method for monitoring the operation of an article forming system, the article forming system comprising a forming device for forming a sheet of material into an article having a predetermined shape and an inner space, the method comprising the steps of:

determining the presence or absence of an identifier on or in the sheet of material via a monitoring system, wherein the identifier encodes or comprises sheet information regarding the identity and/or characteristics of the sheet of material;

reading the identifier of the sheet of material via the monitoring system to obtain or interpret the sheet information encoded by the identifier of the sheet of material when the identifier is present; and

outputting a signal to a computer remotely located from the article forming system when the sheet information read from the identifier indicates that the sheet of material falls outside of a predetermined category, or when the sheet of material is absent an identifier.

66. A method of providing a sheet of material for use in forming an article using a controlled article forming system, comprising:

providing a sheet of material having an identifier thereon or therein, wherein the identifier encodes or comprises sheet information regarding the identity and /or characteristics of the sheet of material, wherein the sheet of material is able to be used with an article forming system comprising a forming device for forming the sheet of material into an article having a predetermined shape and an inner space, wherein the article forming system comprises a monitoring system comprising a reading mechanism for determining the presence or absence of the identifier on the sheet of material and for reading the identifier to obtain or interpret the sheet information of the identifier, and wherein the monitoring system is able to modify the operation of the article forming system when the sheet information indicates that the sheet of material falls outside of a predetermined category; and

selling and delivering the sheet of material to a producer or seller of the article formed from the sheet of material wherein the producer or seller of the article uses the controlled article forming system to form the article from the sheet of material.

67. The method of claim 66 wherein in the step of providing a sheet of material, the sheet information is indicative of at least one of the source, shape, dimension, coloring, pattern, material, bonding material, structural feature, potential use, or combinations thereof, of the sheet of material.

68. The method of claim 66 wherein in the step of providing a sheet of material, the identifier comprises at least one of a bar code, watermark, hallmark, logo, text, word, name, symbol, device, graphic, picture, seal, hologram, color code, magnetic code, chemical tag, nanobarcode, DNA tracer, stacked symbology, matrix symbology, or combinations thereof.